Stage 0 – Project Application & Programming

Project Applications

Steps for a Good Application/ Stage 0 Document

- 1. Utilize a Project Team
- 2. Develop a well-defined Purpose and Need of the Project. Link it to local, regional or statewide plans if possible
- 3. Develop a good project scope and description
- 4. Determine a reasonable project schedule
- 5. Provide a realistic project budget

Parts of the Application

- Sponsor Information
- Consultant Information
- Project Background
- Purpose & Need
- Project Scope & Detailed Description
- Maps, Plans & Photos
- Benefits
- Implementation (Schedule)
- Project Costs
- Operation & Maintenance Cost
- Program Specific

---Sponsor Information

- Official Entity Name
- <u>Type of Sponsor</u> A governmental entity (Parish, State Agency, City, Town, Village, etc)
- Contact Information
- <u>Signatory Person</u> The person granted signatory authority to commit the LPA to providing the matching funds
- <u>Contact Person</u> and/or Responsible Charge The person who will be the contact with DOTD for the project management responsibilities

- Address
- Phone Number
- FAX Number
- <u>DUNS Number</u> The **Data Universal Numbering System**, abbreviated as **DUNS** or **D-U-N-S**, is a proprietary system developed and regulated by Dun & Bradstreet (D&B) that assigns a unique numeric identifier, referred to as a "DUNS number" to a single business entity.
- <u>Federal I.D.</u> An Employer Identification Number or EIN (also known as Federal Employer Identification Number or FEIN) is the corporate equivalent to a Social Security number. It is issued to entities, such as states, government agencies, corporations, limited liability companies, and any other organization that must have a number for a purpose in addition to reporting withholding tax.
- <u>Vendor Number (If known)</u> Payments are now required to be processed through LA DOA (Louisiana Division of Administration). A LaGov/ERP vendor number (9 digits) is required for payment to a vendor. The Office of State Uniform Payroll (OSUP) is the accounts payable Central Control Agency for vendor payment processing for the LaGov/ERP system. Vendors may receive payment in two ways. Vendor direct deposit payments are sent each work day, except when that day is a State holiday. Vendor check payments are printed and mailed on Tuesdays and Fridays of each week, except when that day is a State holiday.

-----Consultant Information

If LPA is paying for 100% of the engineering/design consultant and has selected their engineer, DOTD requests the entity provide the consultant information

-----Project Background

(Brief Project Information)
Project name – Limited to 40 characters (including spaces)
Location
Parish
GIS Coordinates (Required for DOTD's Bidding Program, Trns*port)
State House and Senate Districts
Length

-----Purpose and Need

Purpose and Need Defined

<u>Purpose</u>: Defines the transportation need to be solved and outlines the goals and objectives of the specific project. It is an overarching statement of why you are pursuing the project; objectives that will be met to address the transportation deficiency.

<u>Need</u>: Provides data to support the purpose/ problem statement. Describes the key problem(s) being addressed and the cause of those problems. It is a tangible fact based problem; i.e. a transportation deficiency.

Purpose & Need Importance

- 1. Provides critical foundation for successful decision making
- 2. Provides a basis for evaluating reasonableness of the alternatives for alternative development and screening and environmental analyses
- 3. It informs decision makers
- 4. It establishes reasons for moving forward with Federal action
- 5. It can be used as a basis for dismissal of no-action discussion

Establishing Preliminary Purpose & Need in the Planning Stage

- 1. Important to justify eligibility
- 2. Important for prioritization
- 3. Sets the stage for identification and evaluation of project alternatives
- 4. Tied to community/local goals and objectives

Guidance and Resources

"Purpose & Need Document" includes the following information:

- Background
- Needed for National Environmental Protection Act (NEPA) Stage 1
- Logical Termini
- How to Develop Preliminary in Planning
- Types of Proposed Action/Projects
- Examples

Purpose(s) of a Project - Categories

- System Linkage
- Capacity
- Transportation Demand
- Legislation (rarely used)
- Economic Development
- Modal Interrelationships
- Safety

Roadway Deficiencies

-----Project Scope & Description

<u>Project Scope</u>: What you want to do in the project from the initial point to the ending point

- It should reflect the statement of the Purpose and Need
- It is the "What" and "where" of the project
- It should include all of the requirements of the individual LPA programs

<u>Description</u>: The description is all of the work necessary to complete the project. It should include all major items that will impact the schedule and budget

- It should reflect the level of detail required in the individual programs
- It should be as complete as possible to allow accurate budget compilation
- It should reflect all major cost items that will be included in the funding request
- It can have multiple descriptions depending on the range of project alternatives considered

-----Maps, Plans & Photographs

It has been said that "a picture is worth a thousand words". Attaching a pictures helps the reviewer better understand the project. Provide maps & photographs in a "reproducible friendly" format (on 8-1/2" X 11" paper). Suggested attachments are project location map(s), project boundary map, site plan (if available), and photographs of the existing site and/or facility if applicable.

-----Calculating Schedule Time

Projects must have a *schedule* that explains the implementation of the project (anticipated start date, design date, implementation timeframe, completion date and any anticipated "hold-ups"). The schedule must be reasonable and realistic. All projects must follow the DOTD implementation stages and all stages must be addressed. A copy of a completed "Schedule Planner Worksheet" showing maximum and minimum time is required with the submission of the application or the Stage 0 document.

Typical Causes of Project Delays

- Applications lacking proper information such as realistic scope, schedule and budget
- Signature and processing of initial Entity/State agreement and addenda
- Completion of Stage 0 and Environmental Clearance process

- Right of Way acquisition process
- Response to comments from DOTD
- Submittal of incomplete Final Plans to DOTD

----- Budget

Determining Project Budgets

Determining a project budget is a helpful way to ensure that sufficient budget exists throughout the process to avoid cutting the scope to stay within budget. Calculating realistic project budgets will expedite the selection and streamline the project process due to fewer discussions with DOTD involving cost and additional task orders (if applicable).

A realistic project budget is required to ensure compliance with Louisiana State Bid Laws. A preliminary estimate of the major project items are wanted in the application. The estimate will become more detailed through design. A conservative, but realistic budget may help combat scope creep

When engineering costs are funded through the program, they should be estimated as a percent of the total construction cost.

Engineering Design Costs

When engineering costs are funded through the program, they should be estimated as a percent of the total construction cost for the purposes of the application only. Eventually, the costs will be determined by utilizing scope, manhours and unit prices. For small projects, the engineering cost can be figured as much as 40% of the construction cost.

Construction Cost Estimating

- Using Unit and Lump Sum Items
- Understanding Contract Items

There are two types of contract items for construction projects. They are lump sum and unit price. Project cost will be based on costs of both types of items.

- Lump Sum Items typically are the fixed costs that do not vary directly with the scope of the project, but by the size and type of the project.
- Unit Price Items vary directly with the amount of materials needed to complete the project due to the type of work to be performed

The purpose of the *Cost Estimate Worksheet* is to identify major cost items based on DOTD Contract Bid Items that are typically paid for by unit price. The *Cost Estimate Worksheet* uses the item description/bid item number, the unit of measure, the weighted unit price, the bid item quantity and the item cost.

Assistance: Typically, the DOTD program managers have a good idea of the costs of both engineering and construction costs within their respective programs and can provide additional guidance if needed.

Steps to determining a preliminary estimate

Unit Price Tips

- Average quarterly unit price from this file on DOTD website will most likely be lower than the unit price available for smaller projects with smaller quantities
- Many LPA projects are relatively small and unit price is higher than for larger volume projects
- A 150% adjustment is a rule of thumb for adjusting the unit price for a small quantity.

<u>Step 2</u> – Lump Sum Items – The typical lump sum items required for a project are 1) Mobilization, 2) Temporary Signs and Barricades 3) Construction Layout. Lump sum items are calculated after the unit prices are calculated and totaled. The following are recommendations for estimating lump sum items.

- Mobilization is estimated to be 5-15% of Unit Price Subtotal
- Temporary Signs and Barricades is estimated to be at 5-10% of Unit Price subtotal
- Construction Layout is estimated to be at 5%-10% of Unit Price Subtotal
- The selected percentage will be determined by the project size. This is an inverse relationship; the larger the project the smaller the percentage.

<u>Step 3</u> - Contingency Estimates – These costs are added to account for items that cannot be accurately estimated during the application/Stage 0 phase or cannot anticipated. They range from 10-30% of the total based on project complexity.

Example – Preliminary Construction Cost Estimate

<u>Sidewalks in Anytown, LA</u>: The scope of the project is to construct approximately 1750' of concrete sidewalk from The New Community center to the Proposed Park and Ride Facility.

Note: DOTD Policy - Sidewalks must be at least 4' wide and normally offset 2' or more from back of curb. If the sidewalk is placed adjacent to curb, they must be at least 6' wide and a barrier curb is required.

Proposed Layout of sidewalk in Anytown: The proposed 1750' of sidewalk will be adjacent to the roadway. A Barrier curb must be used with the 6' wide sidewalk and the sidewalk will be 5" thickness. For the purposes of the application, turnouts and driveway calculations will be neglected

Determine Expected Contract Items

- Sidewalk item
- Handicapped curb ramps
- Yard drains
- Concrete curbs
- Catch basins
- Removal items
- All projects have Temporary Signs & Barricades, Mobilization & Construction Layout

Determine contract items from DOTD Master List of Contract Items

- Go to DOTD Internet site
- Choose "BUSINESS Working with DOTD"
- Choose "Construction Services"
- Choose "Project Letting Info"
- Go to "Standard Item File Weighted Unit Price" (at the bottom of the page)
- Choose "2008 Spec Year (English)"
- Hit Open
- Choose "Master Item Lists"
- Read the description to determine appropriate item number.

 NOTE: estimated quantities and unit prices are based only on the appropriate items.

Sidewalk Item - Scroll to the Concrete Walk item (3 Items). The item numbers are 706-01-00100 through 706-01-00300 and are paid by the square yard (SY). The items have variable thicknesses. Choose 5" thickness (Item number is 706-01-00200). If the

Quarterly Unit Cost is not available, use the Last four Quarter Cost. For this example we will use \$60.04. Computing the quantity: 1750 LF x 5 FT = 8750 SF / 9 SF/SY = 972.2 SY. The item cost is <math>972 SY x \$60.04 = \$58,372.22.

Handicapped Curb Ramp Item - Scroll to the Handicapped Curb Ramp item. The item number is 706-04-00100 and paid by each (EA). For purposes of this example the Quarterly Unit Cost is \$990, Last four Quarter Cost is \$1484.54. Use \$1,500. Handicapped ramps are required at each intersection. There are 3 intersections and 2 ramps are required per intersection for a total of 6 ea. The item cost is 6 EA x \$1,500 = \$9,000.00

Yard Drain Item - Scroll to the Yard Drain Pipe item. Choose the diameter (in this case, 12"). The item is 701-07-00500 and paid by linear foot (If). Assume the last Quarterly Unit Cost is Not Available, and the Last four Quarter Cost is \$28. Because there is a small quantity of pipe a 150% adjustment will be used. Assume yard drain will be placed every 200 If & 10 ft. pipe will be required for each yard drain. This would equal 1 X 9 = 9 X 5 = 45 If. The item cost is $45 LF \times $45 = $2,025.00$

Concrete Curb Item - Scroll to the Concrete Curb item. Choose barrier curb. The item number is 707-01-00200 and paid by linear foot (If). Assume the "Quarterly Unit Cost" is \$11.99, and the "Last Four Quarter Cost: is \$19.45. Since it is a small quantity, use \$20. For computation, the item cost for Concrete curb is $1750 \, \text{LF} \times $20 = $35,000.00$

Catch Basin Item - Scroll to the Catch Basins items. Choose type CB-05 for the yard drains. The item is 702-03-00400 and paid by each. Assume the "Quarterly Unit Cost" is \$1,000, and the "Last Four Quarter Cost" is \$781.06. Since it is a small amount an adjustment of 150% will be used. The computation for the item cost is 9 EA x \$1,500 = \$13,500.00

Removal Item - Scroll to the removal items. In this case, we are using the general item, 202-01-00100 paid by lump sum because it will be small and consist of existing signs and some driveway pavement. No "Quarterly Unit Cost" is available. The estimated item cost will be \$5,000.00 (which is a minimum estimate)

Lump Sum Items - Temporary Signs & Barricades, 713-01-00100 paid by lump sum is required for every project. This is a small project without any major traffic shifts; therefore, 10% of Unit Price Item Subtotal will be used. Mobilization, 727-01-00-00100 paid by lump sum is required for every project. It is not anticipated that any unique or extremely large equipment must be mobilized; therefore, 10% of Unit Price Item Subtotal will be used. Construction Layout, 740-01-00100 paid by lump sum will be used. The layout for this project is not anticipated to be difficult; therefore, 5% of Unit Price Item Subtotal will be used. An additional 10% of Construction Cost Subtotal will

be factored for contingencies. Since this is a small project, the engineering will be estimated to be 40% of Construction Total.

Determining the opinion of probable cost for a project in final design

The purpose of the Cost Opinion is:

- To place an expectation for the LPA to set aside sufficient money to fund the project.
- To place a reasonable expectation on the contractors for the proposed cost
- To introduce to contractors the relative magnitude of the project

The opinion of probable cost is used by DOTD to prepare the Summary of Estimated Quantities Plan Sheet. This is generated by DOTD from the opinion of probable cost; therefore, the consultant/designer no longer submits this plan sheet.

Quantities must be separated if:

- a project has different control sections (by control section)
- a project has non-participating items
- a project has multiple funding sources

Plan preparation itemizes the items of work and their quantities. The item numbers are entered into the DOTD system (AASHTO Trns.Port 2.0).

The Master Pay Items List can be found on DOTD website: http://www.apps.dotd.la.gov/engineering/lettings/construction.aspx shown at the bottom under Standard Pay Items List. This list shows both existing Non-Standard Pay Items and new Non-Standard Pay Items.

When producing plan quantities, it is desirable to remove things that cause ambiguity and conflicts. This will help to get the best prices from the contractor bids. Developing a realistic project budget will expedite the bid approval process due to bid selection parameters. A realistic project budget is required to ensure compliance with Louisiana State Bid Laws. The Opinion of Probable Construction Cost is the "best guess" of the cost of the project but is not a guarantee of the actual low-bid amount.

There are two types of contract item types for construction projects; lump sum and unit price. The project cost will be based on costs of both types of items. Lump sum items vary by type of project. Lump sum items typically are the fixed costs that do not vary directly with the scope of the project. The unit price items vary by quantity (material

cost). Unit price items vary directly with the amount of materials needed to complete the project due to the type of work to be performed.

Steps to Create an Opinion of Probable Costs

- 1. Identify all cost items based on DOTD Contract Bid Items that are typically paid for by unit price.
- 2. Create a Worksheet with the Following Columns:
 - a. Item Description/Bid Item Number
 - b. Unit of Measure
 - c. Weighted Unit Price
 - d. Bid Item Quantity
 - e. Item Cost
- 3. Determine a Unit Price Subtotal for the work to be performed.
- Locate Weighted Unit Prices for Contract Bid Items on DOTD Website (<u>Http://wwwapps.dotd.la.gov/highways/lettings/</u> Under: Standard Item File -Weighted Unit Price find the file: 20140707_2008 Spec Year (English))
- 5. Use this file to obtain the current Statewide Average Unit Price for the Unit Price Items of work to be performed.

The weighted prices that are shown in the table are based on the last quarter or the last four quarter quantities (which are provided) as well as the number of bids received for that the unit price. Large quantity items typically have lower bid prices relative to the overall market. The average quarterly unit price from this file on the DOTD website will characteristically be lower than the unit price available for smaller projects with smaller quantities. Many LPA projects are relatively small and unit price is higher than for larger volume projects. A 150% adjustment is a normal rule of thumb for adjusting the unit price for a small quantity.

- 6. Add These Lump Sum Items to EVERY PROJECT
 - a. Mobilization estimated at 5-15% of Unit Price Subtotal
 - Temporary Signs and Barricades estimated at 5-10% of Unit Price subtotal
 - c. Construction Layout estimated at 5%-10% of Unit Price Subtotal

The selected percentage will be determined by the project size. (It is an inverse relationship)

7. Add a contingency to spreadsheet.

The range is typically from 5-15% based on project complexity. It will depend on the LPA's familiarity with construction bids and project. The recent estimates and bid results will be very important in this determination.

Bid Award Parameters

- 1. All projects that fall between 25% below to 10% above the DOTD engineer's estimate will be awarded.
- 2. A written explanation will be required before a project can be awarded if the project is more than 25% below the engineer's estimate.
- 3. Projects that are above 10% of the estimate will be reviewed for the concurrence of award/rejection decision by the DOTD Bid Review Committee, and a written justification will also be required from the Responsible Charge, Project Manager and the Program Manager, for the decision submitted.

-----Operation & Maintenance Costs

Operating and maintenance cost should be considered when planning a project. DOTD does not assume the maintenance required for LPA project. The sponsoring entity must show a plan for operation and maintenance of the project. Projects should be in place and maintained for a period of not less than ten years, unless otherwise agreed upon. To ensure that appropriate upkeep of this investment, applicants must submit maintenance plans (including budgets) and agreements for the projects listed on the application.

The operation and maintenance costs should include an estimate of the annual cost of operation as well as the annual cost of maintenance and the source of those funds. For landscape projects, a formal Operation and Maintenance manual will be required at final submittal; this document will be subject to review by appropriate DOTD personnel to ensure its adequacy. The LPA should discuss the maintenance on landscaping projects within state owned right-of-way with the appropriate DOTD District personnel.

-----Project Benefits -

This portion of the application extols the benefits of the projects for the community. The following are examples of project benefits.

- Historic transportation relevance
- Improves highway capacity
- Enhance public use and/or walkability
- Enhance quality of life
- Aligns with city's master plan
- Enhances public safety
- Supports sustainable communities
- Connects traffic generators (developments)
- Uses complete streets (context sensitive design)

-----Certification

The applications must be signed by individual who has the authority to sign on behalf of the LPA. The signer is certifying that the LPA has the legal authority to enter into a contract to implement the project and that all information provided is complete and accurate to their best knowledge.

How is a Project Programmed?*

Non-Application based Programs for LPA's

Highway Safety Improvement Program - Roadways

The purpose of this funding category is to reduce the number of fatalities and injuries on ALL public roadways. DOTD annually solicits projects from their Districts on State owned roads (using information from the statewide crash data base and priorities from Strategic Highway Safety Program (SHSP). The LPAs should discuss safety concerns on state owned roads in their areas with their DOTD District Administrator and/or their Regional Safety Coalition in their area for possible safety projects. The LRSP will work on locally-owned roads. The projects range from 80% to 100% federal funding depending on project type.

Highway Safety Improvement Program - RR

The purpose of this funding category is to reduce the number of fatalities and injuries at public highway-rail grade crossings through the elimination of hazards and/or the installation/upgrade of warning devices at crossings. A crossing inventory and diagnostic reviews are used by DOTD to prioritize crossings for improvement, documented in the RR Safety Action Plan. LPAs should discuss safety concerns on highway-rail grade crossings in their areas with their DOTD District Administrator for possible railroad safety projects. Each District has a designated Railroad Coordinator. These project have 100% federal funding.

Projects in Non-Urbanized Areas

The smaller programs, Safe Routes to Schools, Local Roads Safety Program, Transportation Alternatives Program, Recreational Trails Program, and the Off-System Bridge Replacement Program are all available to non-urbanized area. All of these programs with the exception of the Off-System Bridge Replacement Program require applications to be submitted for selection and funding into the respective programs. The Off-System Bridge Replacement Program requires a Stage 0 document. The applications require some of the same Stage 0 documents information. Selection procedures are unique to each program and can be found in detail on each program specific website.

Projects in Urbanized Areas (UZAs)

Definitions

<u>Urbanized Area (UZA)</u> - A Census-designated urban area with 50,000 residents or more.

<u>Transportation Management Area (TMA)</u> - A UZA with a population over 200,000, designated by the Secretary of Transportation.

<u>Transportation Improvement Program (TIP)</u> - A document prepared by a Metropolitan Planning Organization that lists projects to be funded with FHWA/FTA funds for the next one- to four-year period. It is submitted every two years

The Urban System Program

The Urban System Program is funding through FHWA's Surface Transportation Program (STP) for the large urban areas. For the projects in the Urban System Program (FHWA's Surface Transportation Program (STP) for area with populations between >50K and <200K and for populations areas >200K the projects are selected by the respective MPOs. Each MPO has their own process for the Urban System Program

Eligible project types in the Urban System Program include road/bridge construction (new, rehabilitation & preservation), traffic signalization, mass transportation studies, pedestrian & bicycle facilities and safety improvements.

In order for a project to become a part of these programs, the MPO Policy Board must select the project. After a project is selected by the Policy Board, the MPO Staff must submit a Stage 0 Document to DOTD for approval by the DOTD Planning Division. Once the DOTD Planning Section approves the Stage 0 document, they request a project number and the project may be officially placed in the TIP.

The Stage 0 checklist can be found on the DOTD Division of Multimodal Planning's website at

http://wwwsp.dotd.la.gov/Inside LaDOTD/Divisions/Multimodal/Pages/Stage 0.aspx
The Stage 0 checklist includes information on a project's purpose and need, background and agency coordination, public coordination, project scope, range of alternatives, alternatives evaluation & screening, planning assumptions & analytical methods, potential environmental impacts, schedule planner worksheet, and budget/cost estimate. Time and estimated costs are required for the traffic impact study, environmental clearance, real estate acquisition, utility relocation, traffic management, signalization, railroad crossings, signing. For examples see the Stage 0 Manual of Standard Practice at

http://wwwsp.dotd.la.gov/Inside LaDOTD/Divisions/Multimodal/Pages/Stage 0.aspx

Project Description and Scope

A comprehensive description of the project is required for this document. The existing and proposed conditions require extensive detail concerning the roadway features. Other questions include Complete Street application, landscaping, location with respect to air strips, control of access, scheduling with other projects, value planning, control of access, lighting, navigability of stream, type of bridge, need for a traffic impact study, etc.

Agency Coordination

Agency Coordination is coordination with the public or other agencies; i.e. federal, tribal, state and local environmental, regulatory and resource agencies must be documented. A synopsis of which transportation agencies were included in the agency coordination effort and the level of participation of the other agencies and how the coordination effort was implemented including the steps that need to be taken with each agency during the NEPA scoping is required.

Range of Alternatives

The range of alternatives is an evaluation screening that gives a description of the project concept for each alternative studied. It requests information on the major design features of the proposed facility and asks detailed questions on each alternative. The alternatives are evaluated for reasonableness, no-build/no-action, modal, physical, and operational. Each alternative is reviewed to ensure it connects to logical termini, has an independent utility and does not restrict consideration of alternatives for other reasonably foreseeable improvement.

It identifies overall information including any required design exceptions, the impacts the project would have on freight movement, and if it is near or crosses a railroad.

It establishes how <u>Context Sensitive Solutions</u> are being incorporated into the project It evaluates how the transportation facility fits in its physical surroundings, considers human values such as scenic, aesthetic, historic, and environmental resources, and maintains safety and mobility. It also establishes how DOTD's Complete Street Policy was considered. A brief explanation is required if the project will implement the policy or why implementing the policy would not be feasible. If and how DOTD's "Access Management" policy was taken into consideration. It identifies any safety analyses with results, and documentation of any abnormal crash locations or overrepresented crashes within the project limits and explains how it is addressed.

A <u>traffic component</u> is included. This component should address anticipated future traffic analyses, the need for fiber optics (if so, identification of existing lines to tie into), and future ITS/traffic considerations. It should have attached documentation that is required for a Stage 0 document as required for the Transportation Management Plan (TMP) level as defined by EDSM No. VI.1.1.8.

<u>Construction considerations</u> should be documented. Construction Transportation Management/Property Access and alternative construction methods to mitigate work zone impacts should be evaluated.

<u>Alternatives</u> should be identified. Any screening criteria used to compare alternatives should be described with the agency that has the criteria defined. An explanation for any

alternative that was eliminated based on the screening criteria and which alternatives should be brought forward into NEPA should be expounded and documented. It should include documenting if the public, stakeholders, and agencies had an opportunity to comment during the alternative screening process.

Completed <u>Environmental</u>, <u>Real Estate Need</u>, <u>Stage 0 Cost Estimate Appraiser</u>, <u>and Intelligent Transportation System checklists</u> are required to accompany the Stage 0 document.

Once a project's Stage 0 documentation is accepted by DOTD, funding is committed in the TIP, it moves to Stage 1 – NEPA.

The smaller programs, Safe Routes to Schools, Local Roads Safety Program, Transportation Alternatives Program and the Recreational Trails Programs all require applications to be selected and funded into the respective programs. The respective MPOs should be copied on the applications so they can track the projects / potential projects in their areas